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Liz Lewis
15 Sea Spray Avenue
Shoreham-by-sea
West Sussex
BN43 5PR

22nd May 2024

BY EMAIL: LIZLEWIS26@HOTMAIL.COM

Dear Ms Lewis,

Re: **26 OLDFIELD ROAD, EASTBOURNE BN20 9QD**

Further to your instructions, I confirm visiting the above property in order to carry out a preliminary visual inspection and report in relation to the general structural condition of the property.

The inspection and report have been carried out in accordance with the Consulting Engineer's Conditions of Appointment Agreement No.3, which was issued to you previously.

I comment as follows:

1. The inspection was carried out on Friday 17th May 2024.

2. Description

2.1 The property was a detached residential dwelling arranged over two floors including a loft conversion, assumed to have been built originally as a bungalow.

2.2 The property was constructed with assumed external cavity masonry walls and a timber roof structure supported by internal loadbearing masonry walls. An assumed ground bearing slab had been provided at ground floor.

2.3 For the purposes of this report, it was assumed that the front elevation faced east.

3. Internal Observations – First Floor

3.1 It appeared that the original bungalow had been previously converted with a loft room provided to both the east and west of the building.

3.2 Towards the east of the loft room the assumed original purlins, which were measured to be approximately 50mm x 125mm deep spanning approximately

3.9m, had been retained with evidence that the original struts had been removed.

3.3 Limited visibility of the floor structure was available from within the eaves to the east end of the loft conversion, however it appeared that the new loft to the east had been constructed directly off the original 50x100mm deep ceiling joists with no additional support being provided to the dwarf wall, floor structure, or purlins. There did not appear to be any evidence of strengthening of the purlins or rafters from within the eaves space.

3.4 The underside of the original rafters had been boarded with MDF measuring approximately 15mm thick and which had been provided throughout the east section of the loft conversion.

3.5 Within the south section of the eaves to the east portion of the loft, the ceiling joists were measured to sag down towards the centre of the room at a rate of approximately 10mm over 600mm.

3.6 It was not possible to view the connection between the ceiling joists and rafters over the external walls at the time of inspection.

3.7 Within the converted section of the loft towards the east, the floor below the south purlin was measured to slope down towards the east at a rate of approximately 8mm over 600mm. The floor appeared generally uneven throughout the east portion of the loft.

3.8 Within the west end of the loft conversion the internal walls were constructed using what appeared to be a lightweight concrete block measuring approximately 75mm thick. These blocks had been built directly off the floor joists which were measured to be approximately 50x175mm deep, provided at approximately 400mm centres.

3.9 No sign of significant movement was visible within the floor structure towards the west end of the loft, with floors measured to be generally level throughout.

3.10 Towards the west elevation in the loft a large Velux window had been provided. What were assumed to be the original purlins had been cut to allow for the introduction of the new Velux window, with no sign of support having been provided in this area to the purlins following the suspected alterations.

3.11 A dormer had been provided on the north elevation within the west portion of the loft.

3.12 At the time of my inspection the finishes within the loft conversion were seen to be generally poor and dated, however no sign of significant cracking was observed.

3.13 Towards the north-west of the property access was available to the gable end wall and roof structure. Internally it was observed that no restraint had been

provided between the gable end wall and rafters or between the wall and ceiling joists.

4. Internal Observations – Ground Floor

4.1 While it was not possible to review every element of the ground floor, a general overview of the windows, doors, and floor was taken and, unless noted otherwise, these were observed to be level and plumb to within normal building tolerances and with no clear signs of significant structural movement.

4.2 Towards the south-west, what appeared to be a newer extension had been provided, potentially with a timber frame internal structure, however it was not possible to confirm this at the time of my inspection.

4.3 Finishes were generally poor throughout with hairline cracking observed in multiple areas, however this did generally not seem significant.

4.4 The lintel within the south-west living room was measured to sag towards the centre at a rate of approximately 8mm over 600mm. While no significant cracks were seen around the window frame the internal finishes appeared to be woodchip wallpaper which covered the underlying plaster.

5. External Observations

5.1 The tiles to the north-west gable were seen to have separated approximately at the line of the gable end wall. At ridge level significant movement was seen, with the top of the gable leaning out towards the west.

5.2 Tiles appeared to have separated on the west elevation of the main roof towards the north adjacent to the hip. Signs of significant movement around the Velux window were also observed, as well as the presence of vegetation growing from the top of the Velux window and the south edge of the window frame.

5.3 In general, the roof appeared to be uneven, with signs of movement throughout the west elevation. It was not possible to get a good view of the north and south elevations at the time of my inspection.

5.4 Externally, the brickwork appeared to be in generally fair condition. Some small areas of repointing were seen as well as areas of minor repair however this did not appear significant and, where repairs were undertaken, no reopening had occurred.

5.5 Cracks were seen to the south of the window head externally to the south-west window. The cracks extended into the south window reveal approximately 200mm.

5.6 Stepped cracks were seen to the masonry to the east face of the north garage wall propagating from the concrete lintel. The crack was hairline and did not continue into the north wall.

6. Conclusions and Recommendations

6.1 Based on the observed loft construction, it was my view that this was likely converted either partially or fully following the construction of the original building. There is a possibility that the loft room to the west, including the dormer on the north elevation, may have been part of the original construction based on the increased ceiling joist sizes, however it appeared that alterations have taken place potentially including the introduction of a large Velux window on the west roof and the expansion of the original loft conversion towards the east.

6.2 Based on the visible structure, it was my view that the east section of the loft conversion had been provided inadequately and will likely need to be completely gutted and new structure installed in accordance with good building practice and relevant Building Regulations. This will need to include either strengthening the existing purlins or providing new support by the introduction of steels and loadbearing dwarf walls. New floor joists will also need to be provided to remove the imposed load on the existing ceiling joists. I also suspect that the existing loft conversion would not meet the current standards for Approved Document Part L – “Conservation of fuel and power”, which it would need to in order to obtain Building Regulations Approval, and this would mean the introduction of deeper rafters and additional insulation provided.

6.3 Based on the above I feel that it is likely that the existing loft conversion does not have Building Regulations Approval, and due to the inadequate construction this may cause issues with your insurance and ability to obtain a mortgage against the property. There is a possibility that this could make the sale of this property more difficult in the future. Therefore, I recommend that you ask your solicitors to obtain any documentation in relation to the loft conversion to the east and west, as well as the introduction of the large Velux window on the west elevation.

6.4 Following the above, a detailed review of the existing structure will be required as, based on the observed movement to the roof structure externally, it is my view that the loft conversions have been provided inadequately, and re-build/strengthening works should be suitably designed. While this is certainly true for the east portion of the loft conversion this cannot be confirmed in relation to the west loft conversion without a more detailed review. Given the size of the structural timbers within the loft towards the east I believe that it is unlikely that this could be justified and I recommend that it be upgraded to prevent potential failure of the loft structure in the future.

6.5 There appeared to be signs of movement to the gable wall on the west elevation most likely caused by the lack of restraint provided. This will need to be corrected by the introduction of new galvanised m.s. restraint straps between the gable wall and the rafters/ceiling joists. Following this, the roof will need to be at least partially retiled to close the current gaps that have formed.

6.6 Given the movement to the lintel within the south-west room, I recommend that this be exposed in order to inspect its current condition, as well as whether it

has been adequately provided. The extent of exposure would comprise the removal of the plaster approximately 300x300mm towards the centre of the lintel and to one of the bearings of the lintel following which this can be reviewed.

6.7 Repairs will need to be undertaken to the north garage wall below the lintel bearing however the cracking did not appear to be significant. I recommend that this be repointed using an appropriate mortar to match the existing.

6.8 I saw no evidence of significant structural movement to the internal or external walls at ground floor, and the existing floor structure appeared generally level. I therefore do not have any reason to suspect that any foundation movement had occurred at the time of my inspection. I would, however, recommend as a precaution that a CCTV survey of the existing drainage be undertaken in order to determine the condition of the existing drainage pipes as leaks within drainage pipes are a common cause of structural movement.

I trust the above is clear, but should you have any queries, please do not hesitate to contact me.

Yours sincerely,

J BRAY
Structural Engineer
B.Eng (Hons)

Checked and approved by:

S GRAY
Director
B.Eng (Hons) PGCert, CEng, AIStructE, C.Build.E, MCABE, AMICE